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Measure Information Template

California Building Energy Efficiency Standards
Revisions for July 2003 Adoption

NAIMA Proposed Measure:

Revise mandatory minimum duct insulation to R8 for nonresidential, high-rise residential, and hotel-motel occupancies

November 5, 2001

Description

Section 124 (a) of the current Standards sets the minimum duct insulation requirement for non-residential, high-rise residential and hotel-motel buildings at R4.2 for ducts in unconditioned space. Our proposal would raise the value from R4.2 to R8.

Benefits

Increasing the minimum duct insulation requirement to R8 will save heating and cooling energy statewide. California's current minimum R4.2 duct insulation criteria is below the minimum requirement for new commercial construction in the neighboring states of Washington and Oregon, in Minnesota, and the requirements of the International Energy Conservation Code (IECC).

Environmental Impact

The proposed measure has no potential adverse environmental impacts. The products used to meet the new minimum level are already in use and widely accepted.

Type of Change

The proposed change modifies the current mandatory measure for nonresidential, high-rise residential, and hotel-motel insulation and does not modify or expand the scope of the Standards.

The proposed modification revises Section 124 of the Standards by including a new table of duct R-values. Reference to CMC sections regarding duct insulation will be deleted. The proposed revised table is as follows:

Measure Availability and Cost

This measure will require no new products or technologies. Designers may be required to allocate slightly larger openings for duct clearance. The products necessary to meet the proposed R8 duct insulation requirement are currently available from multiple duct suppliers to installers in ample quantity.

Useful Life, Persistence and Maintenance

A strong argument for approval of this measure is that insulation has a proven long useful life, great persistence, and absence of maintenance requirements. Installation of superior duct insulation at time of initial construction is relatively inexpensive. To add duct insulation at a later date is often difficult or impossible and much more costly.

Performance Verification

No new tools or methods are required to ensure or verify performance of the proposed measure.

Cost Effectiveness

The proposed measure has not recently been evaluated for cost-effectiveness.

Analysis Tools

No new tools are required to quantify energy savings and peak electricity demand reductions – the current reference method is adequate. The applicant may submit data on estimated savings and demand reductions.

Relationship to Other Measures

The proposed measure will have no impact on other mandatory measures or on current prescriptive packages.

Bibliography and Other Research

Supporting research is available from LBL and a research paper (Modera, Lucas, Treidler 1997) that was used to help support the current R8 duct insulation value in the IECC.